REASON

- **To be able to teach, instruct, and assist crews using PGS, the instructor must have an in-depth knowledge of the operation, function, and capabilities of PGS and its components.**

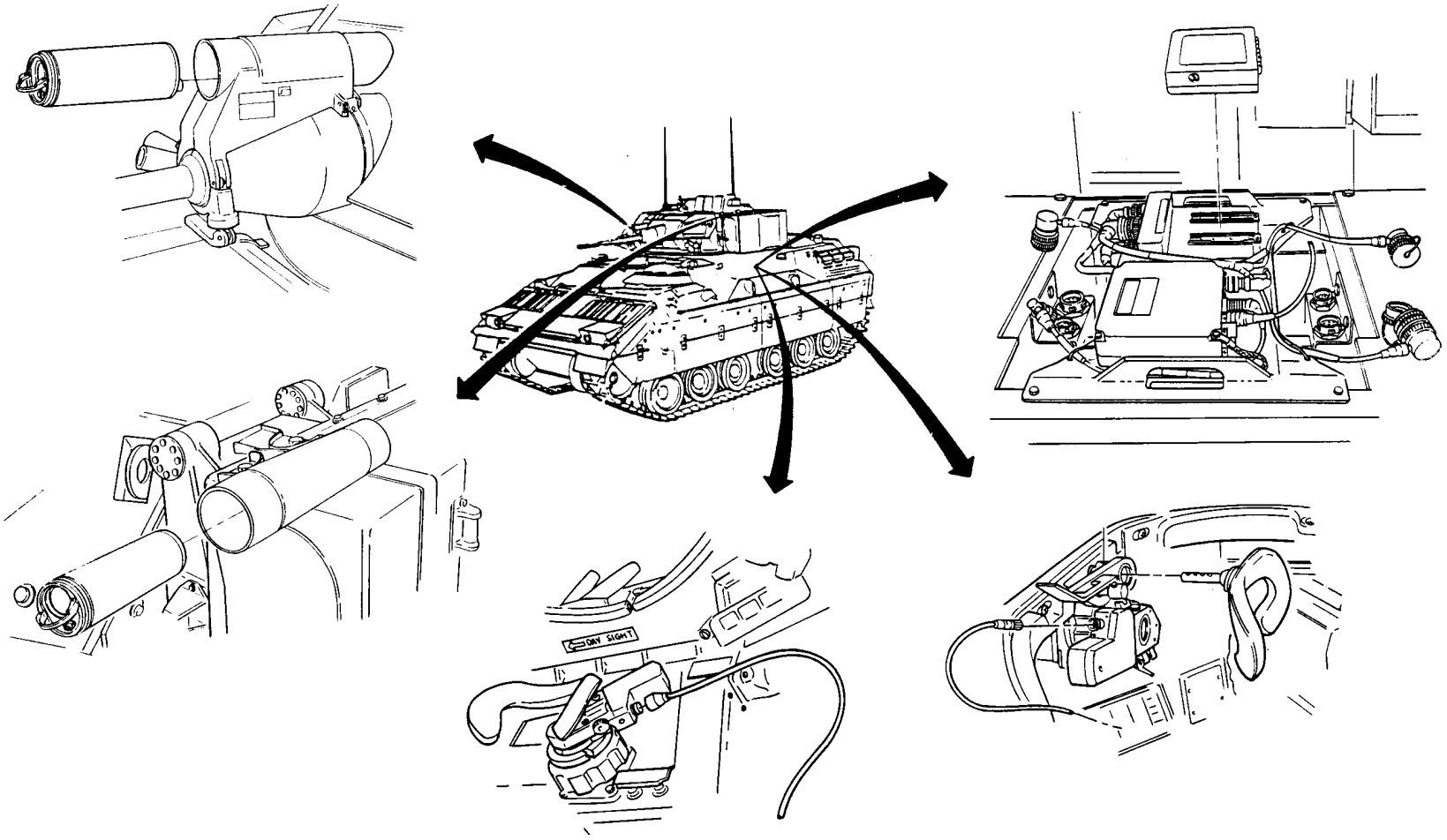
TRAINING OBJECTIVE

- **In a classroom environment, given a student handout, TM 6920-710-12&P-1, and TM 9-6920-711-12&P-1, you will become familiar with the function and capability of PGS and its components.**

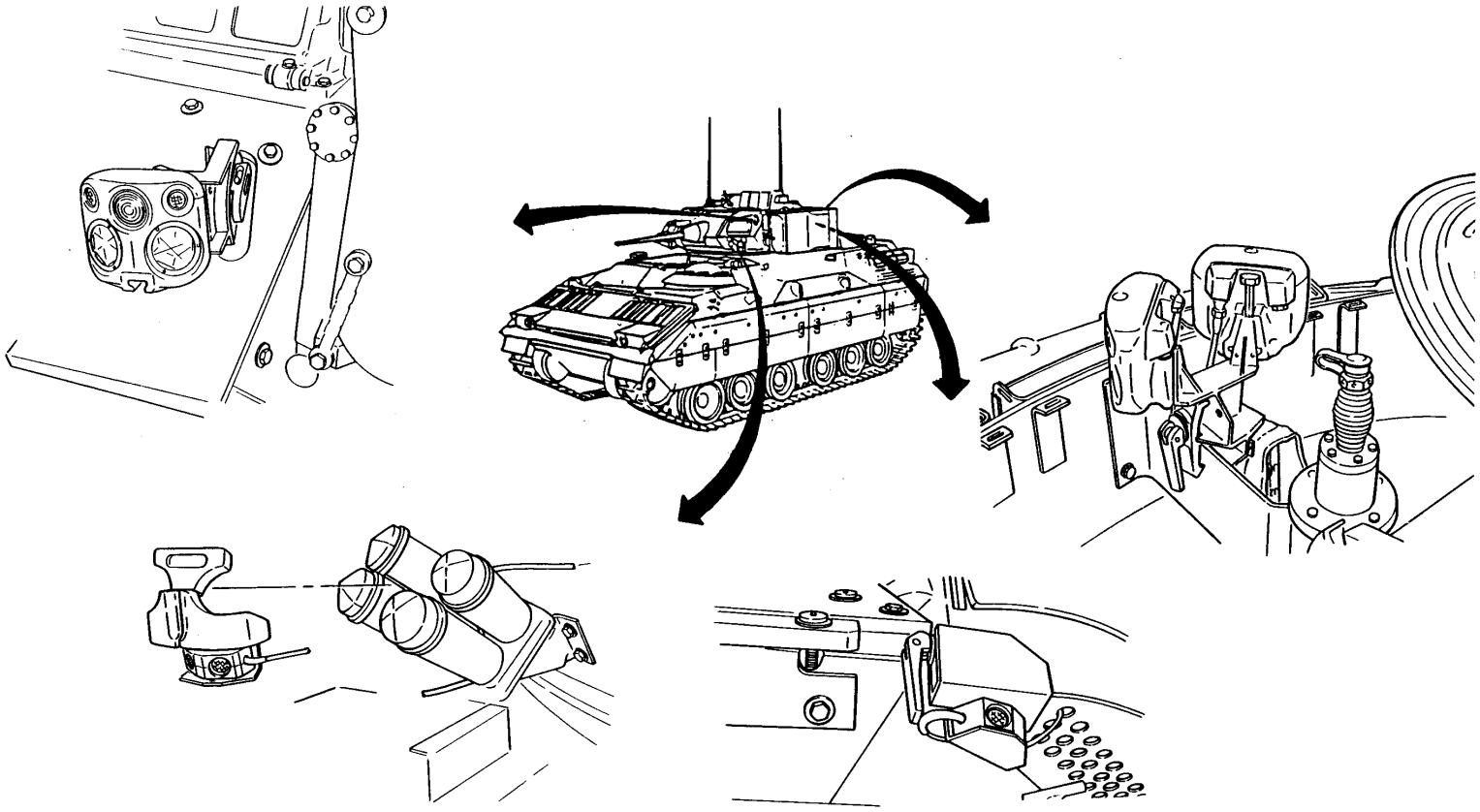
PGS SUB-SYSTEMS

- **Firing system**
  - **Transceiver unit**
  - **Tracer burst obscuration simulator (TBOS) system**
- **Target system**
  - **Target computer unit**
  - **Retro detector and hull defilade detector units**
- **Training Data Retrieval System (TDRS)**
  - **TDRS computer unit**
  - **TDRS memory card**

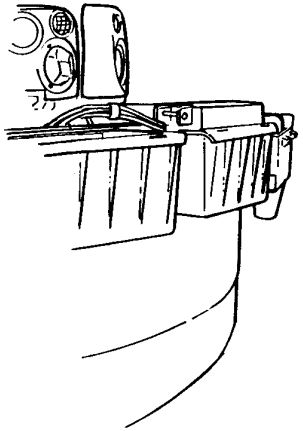
FIRING SYSTEM

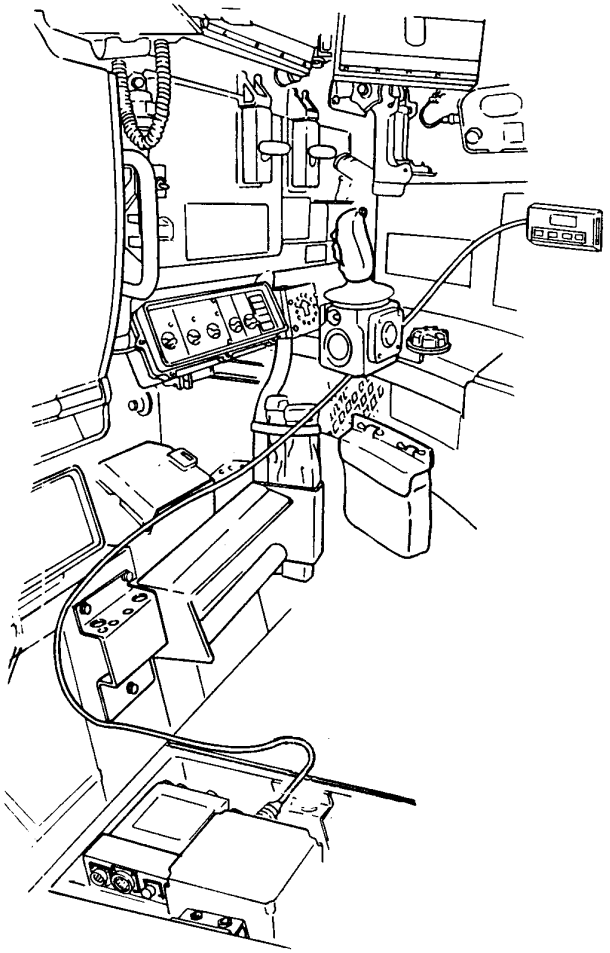


TARGET SYSTEM



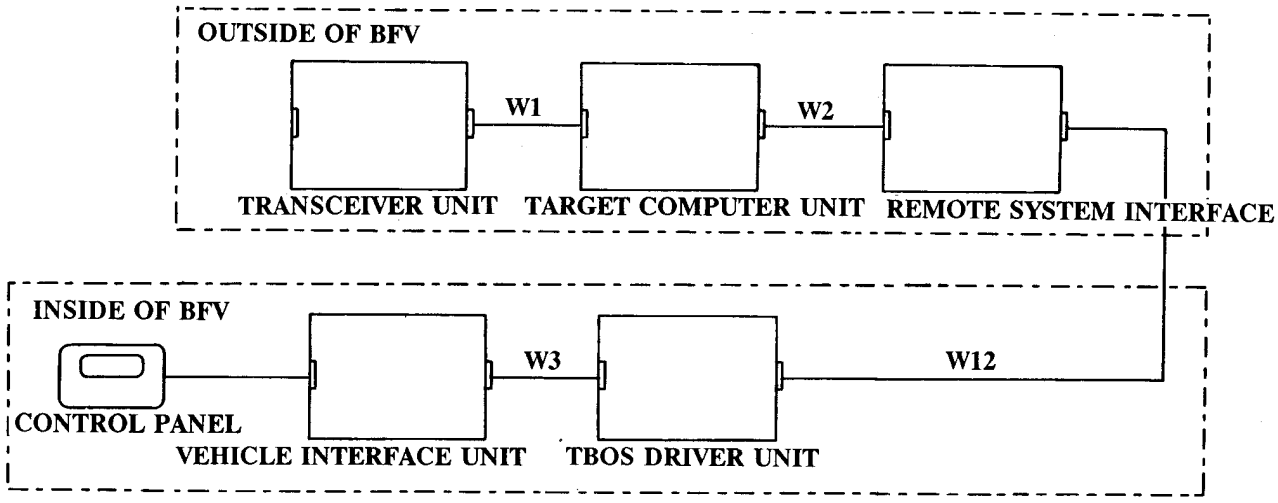
COMMON COMPONENTS



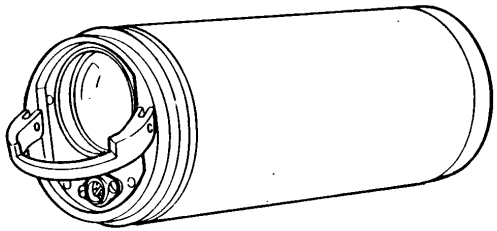


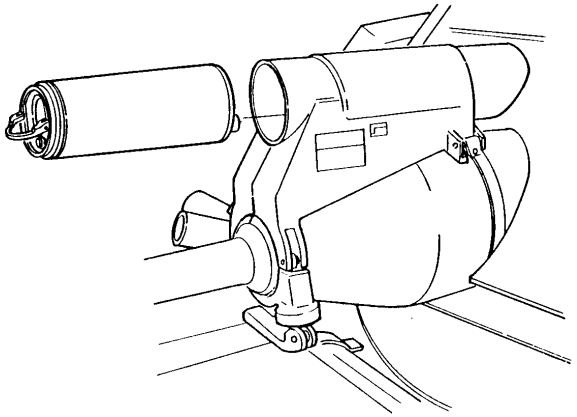
PGS SYSTEM DESIGN

- **Controller Area Network (CAN)**

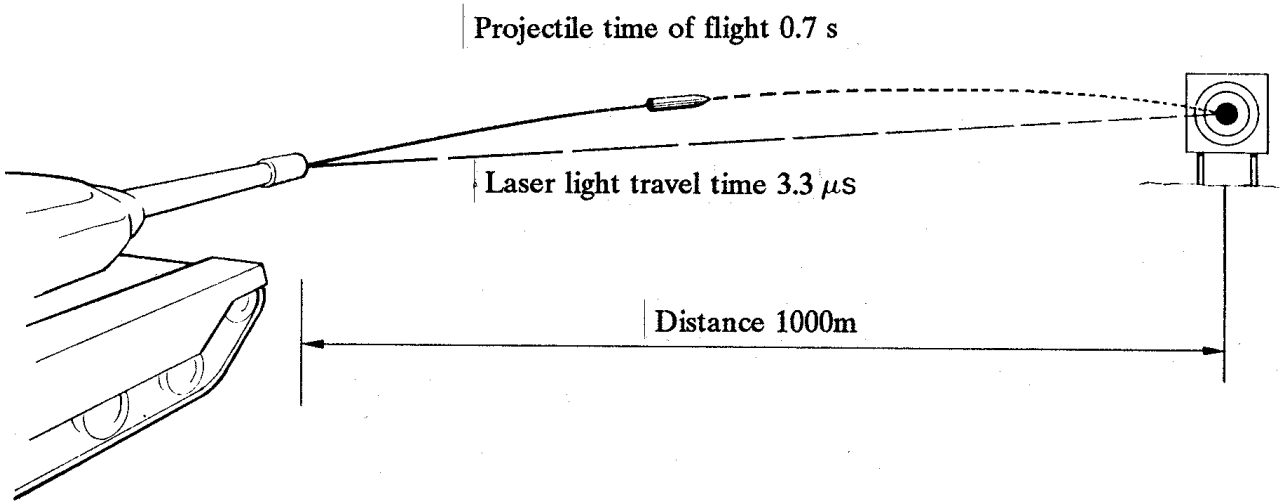


TRANSCEIVER UNIT

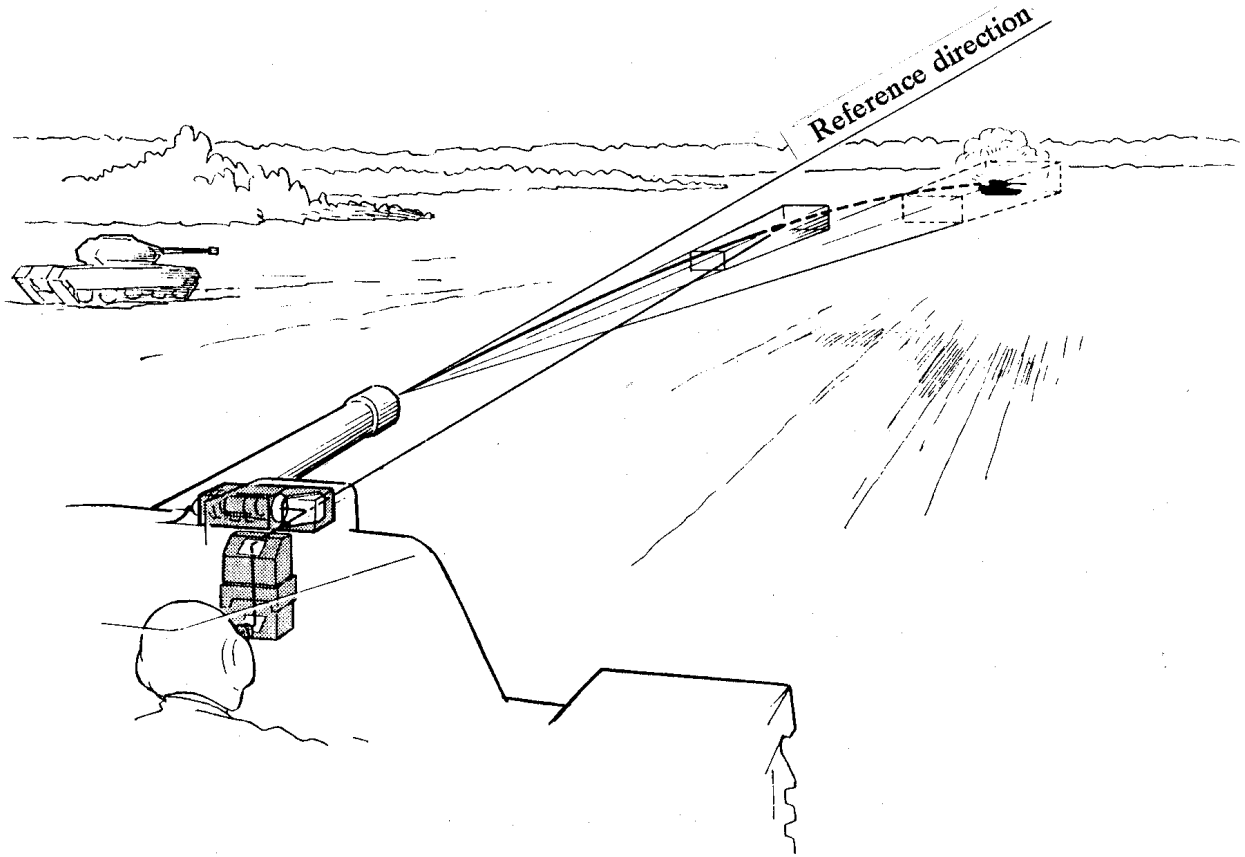




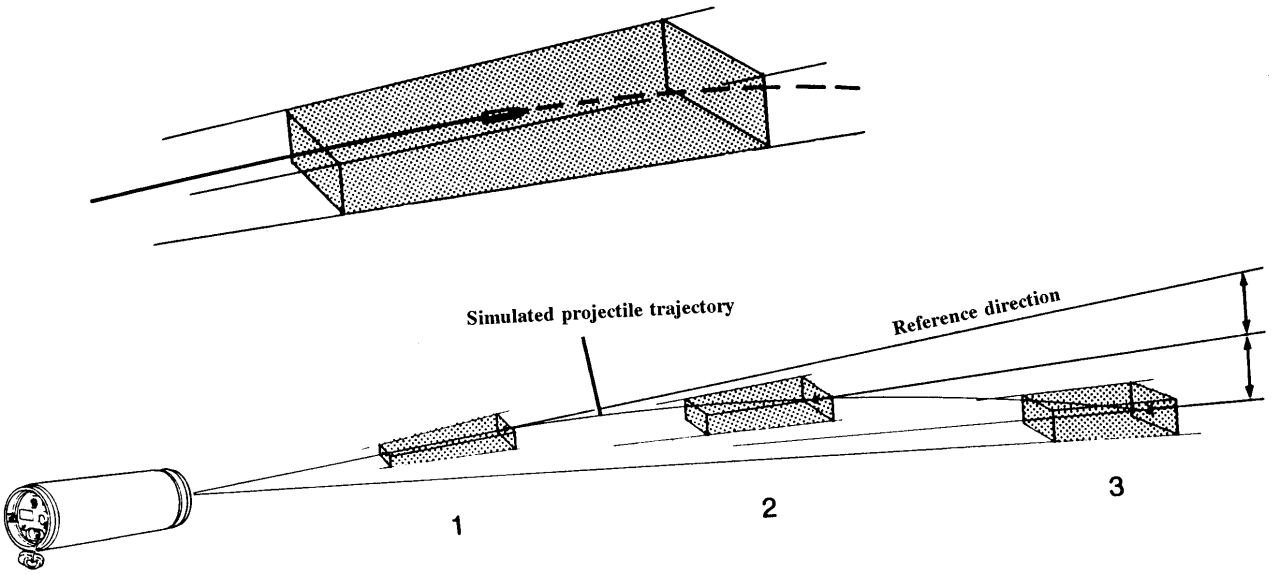
SIMULATION WITH LASER LIGHT



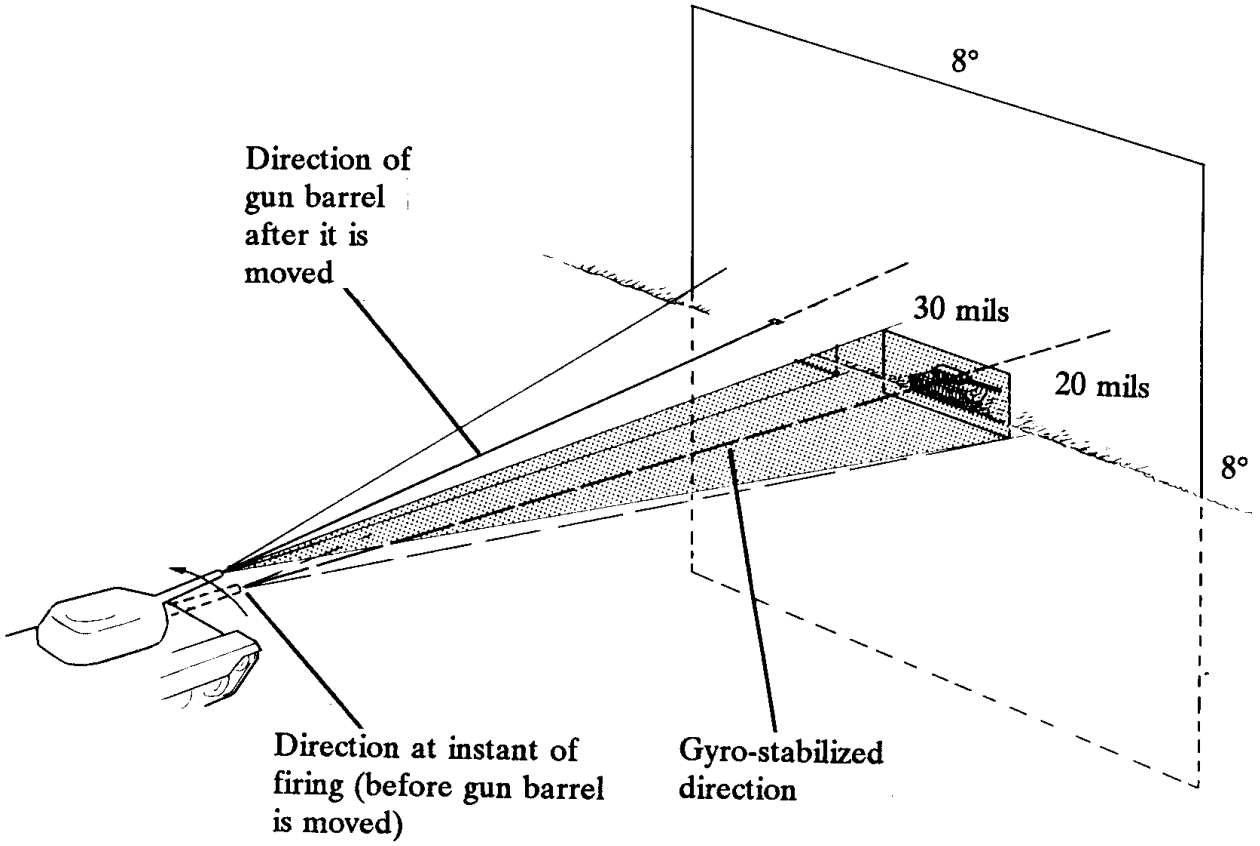
FLYING VOLUME



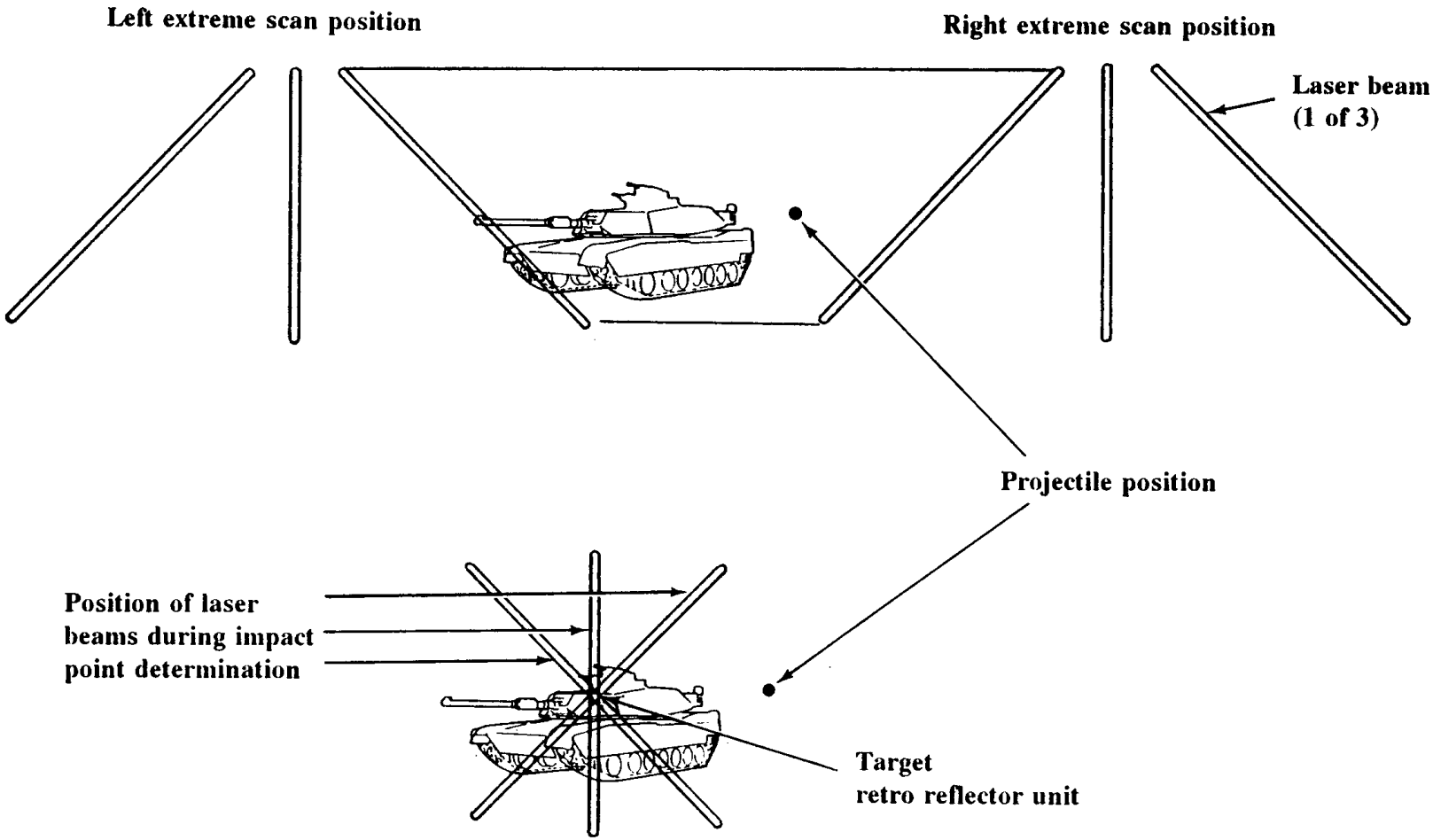
FLYING VOLUME



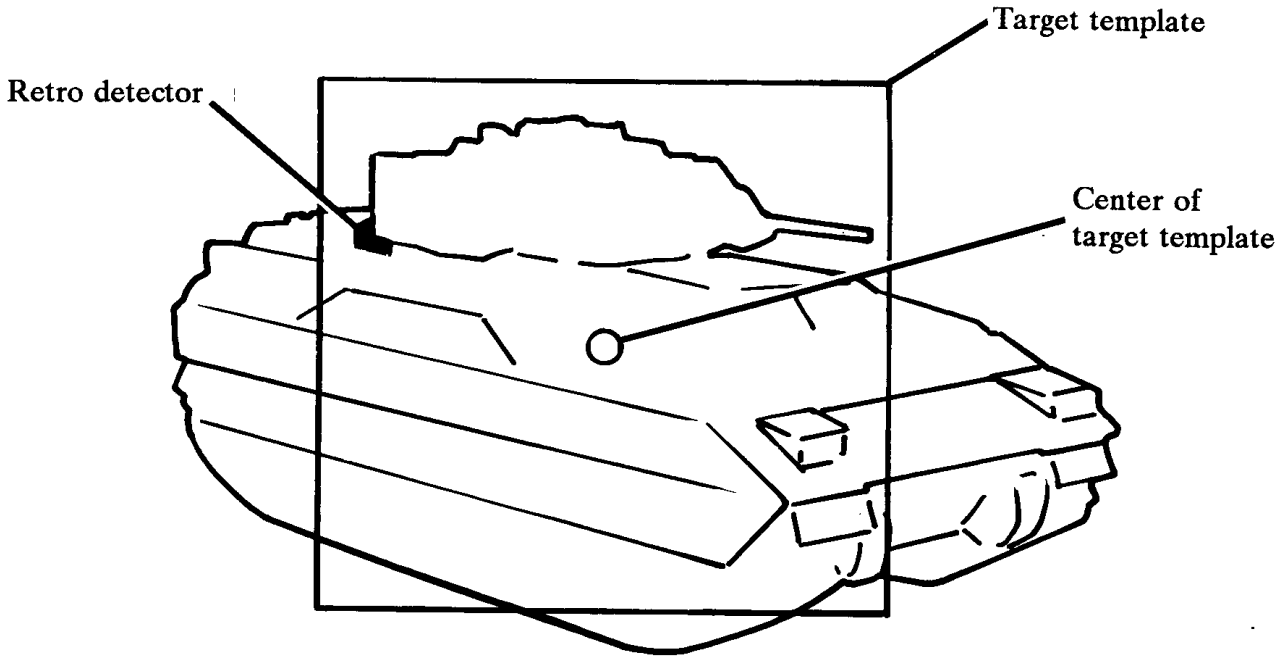
GYRO STABILIZATION



IMPACT POINT DETERMINATION



ENGAGEMENT RESULTS



BALLISTIC SIMULATION

- **Trajectory, velocity, and time of flight for AP (M791), HE (M792), TOW, and 7.62 (M60)**
- **Ammunition dispersion selectable**

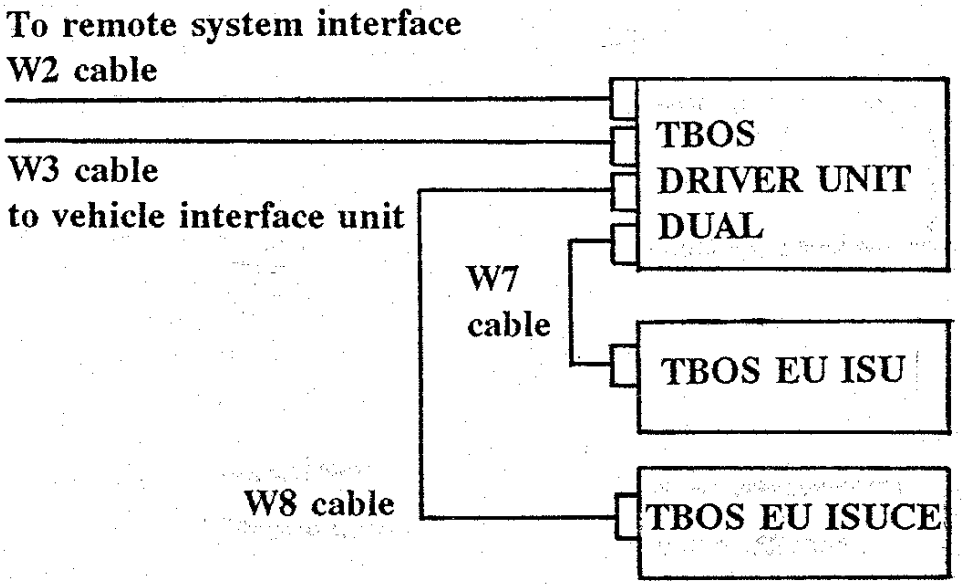
INFORMATION TRANSMITTED

- **Hit position**
- **Ammunition type fired**
- **Player identification**
- **MILES**

TRANSCEIVER UNIT ON ROTOR EXTENSION

- **Protection**
- **Positioned where projectile leaves gun muzzle**
- **Misalignment of sight/gun**
- **Mechanical play sight/gun**

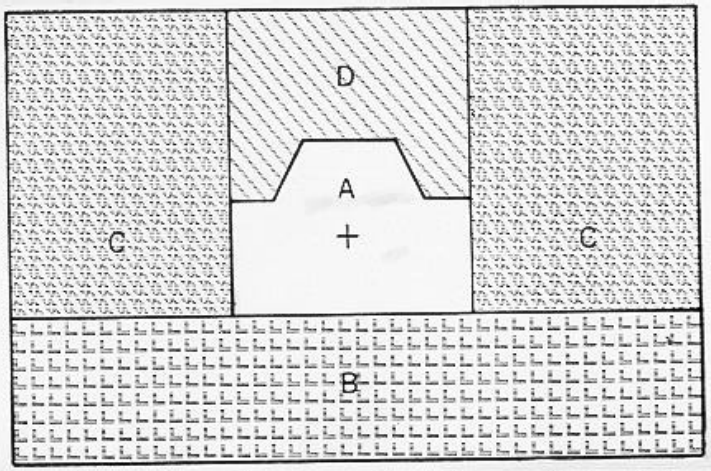
TBOS SYSTEM DESIGN



TBOS EFFECTS

- **Tracer**
  - **Zoomed**
  - **Switchable on/off**
- **Burst**
  - **Size is ammunition dependent**
  - **Size is range dependent**
  - **Switchable on/off**
- **Obscuration**
  - **Programmable, 0-5 sec**

TBOS SIMULATION



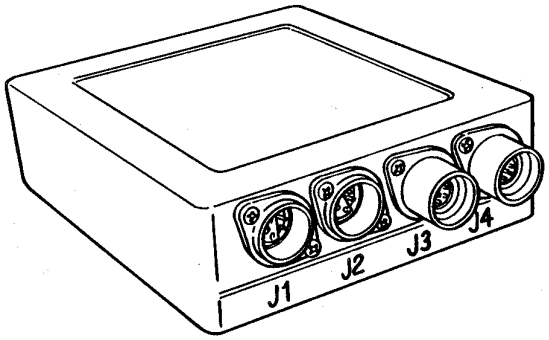
A: Tracer simulation is stopped. Burst indication is given.

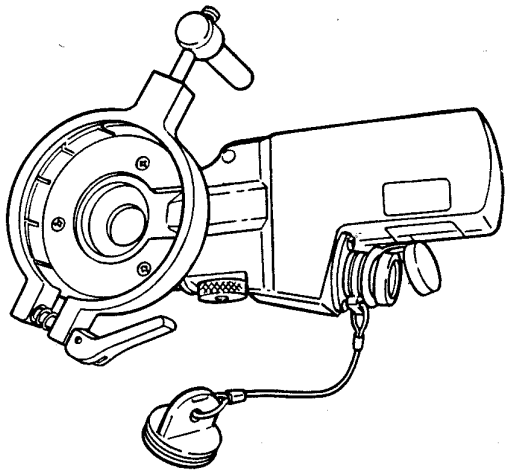
B: Tracer simulation is stopped at ground plane and ground impact is indicated.

C: Simulation continues until projectile reaches maximum simulated range or hits ground.

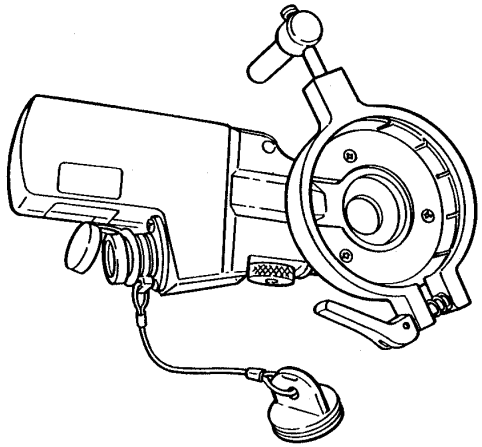
D: Simulation continues until projectile reaches maximum range or projectile reaches upper edge of target template.

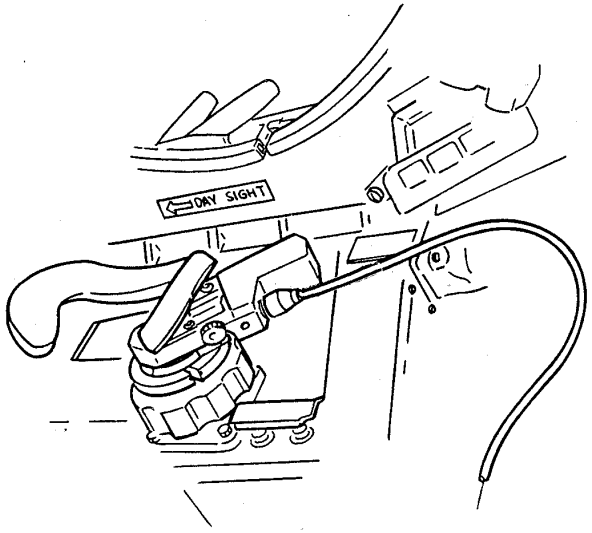
TBOS SYSTEM COMPONENTS



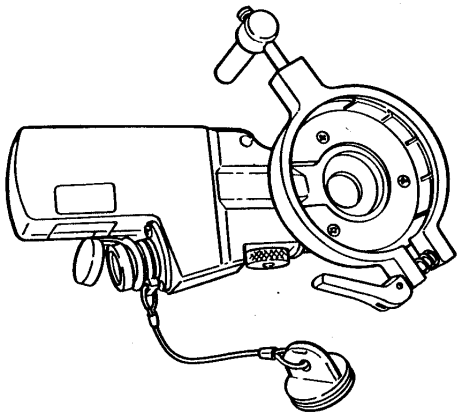


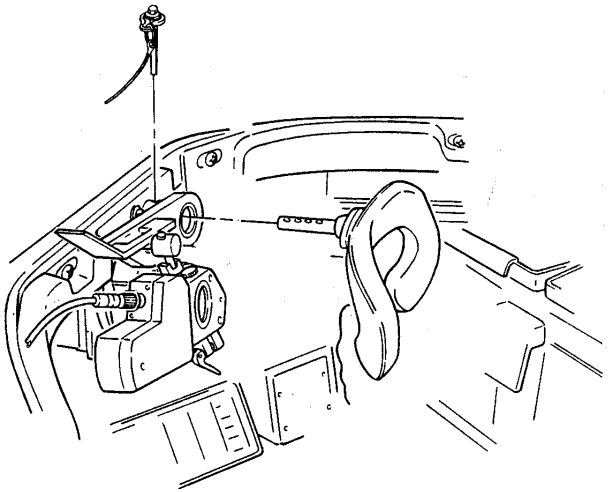
TBOS EYEPIECE UNIT ISU



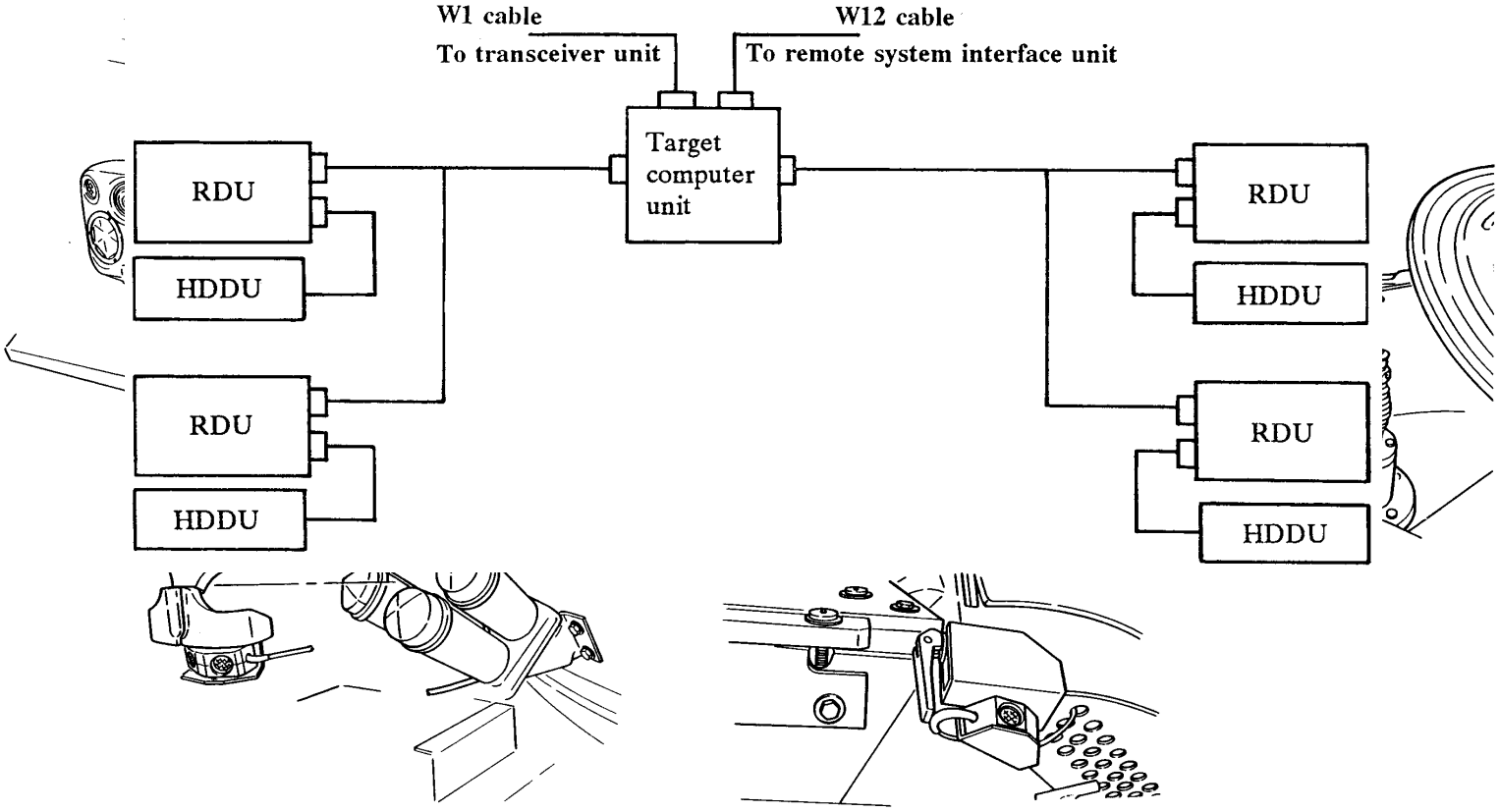


TBOS EYEPIECE UNIT ISUCE

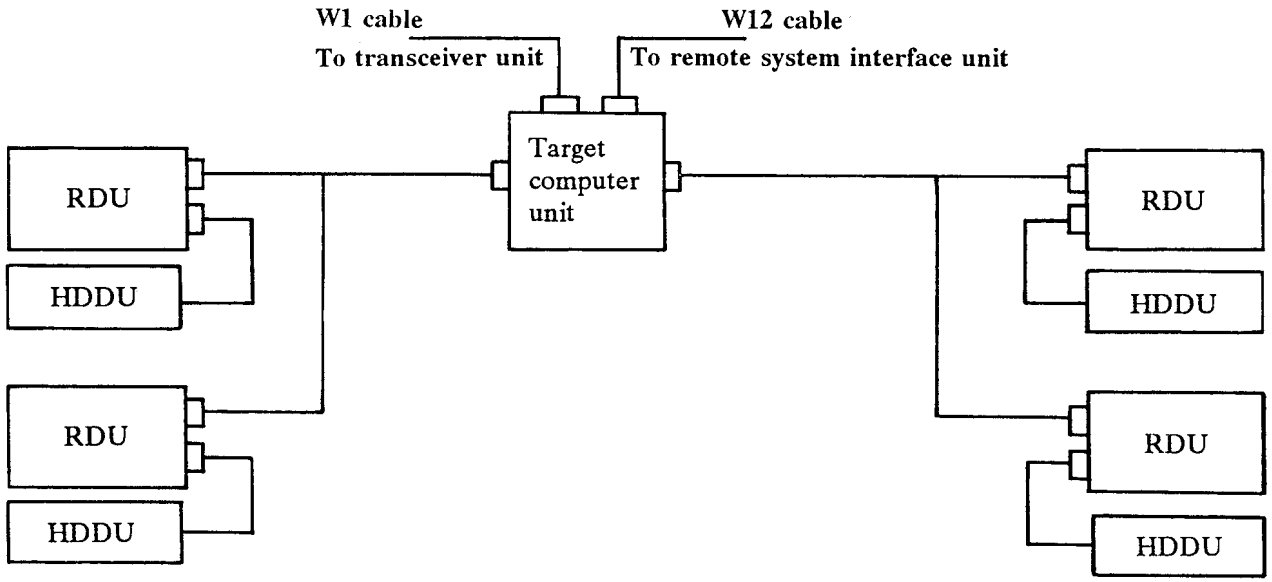




TARGET SYSTEM



SYSTEM DESIGN OF TARGET SYSTEM



TARGET SYSTEM MAIN FUNCTIONS

- **Receive information (coded laser light)**
- **Determine angle of attack**
- **Determine MISS/HIT**
- **Determine MOBILITY or WEAPON KILL**
- **Determine catastrophic KILL**
- **Indicate the effect**

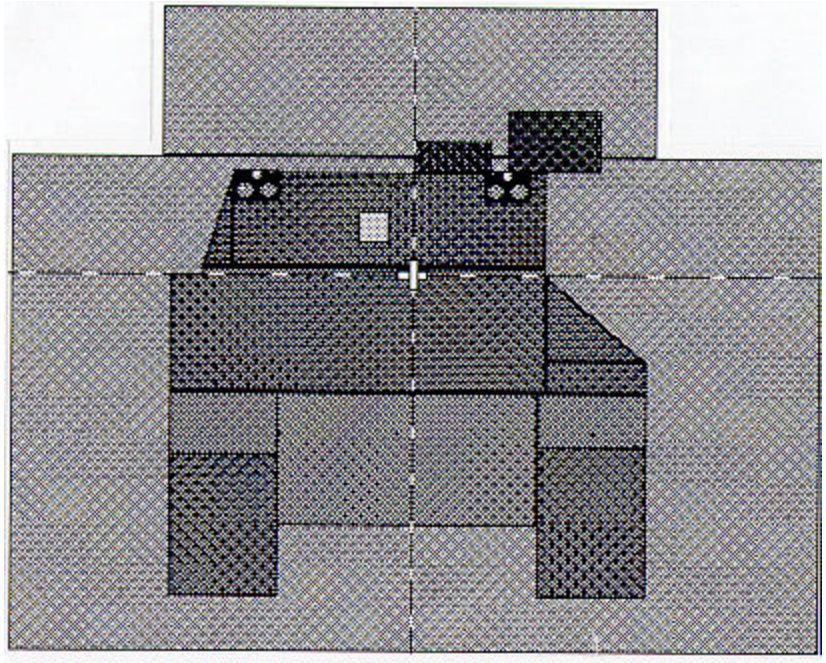
INFORMATION RECEPTION

- **Hit coordinates**
- **Type of ammunition fired**
- **Identity of attacker**
- **MILES information**
- **CGUN information**

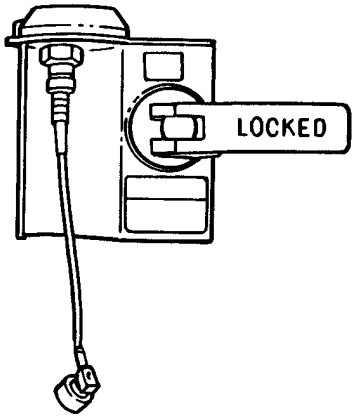
TAMPER INDICATIONS

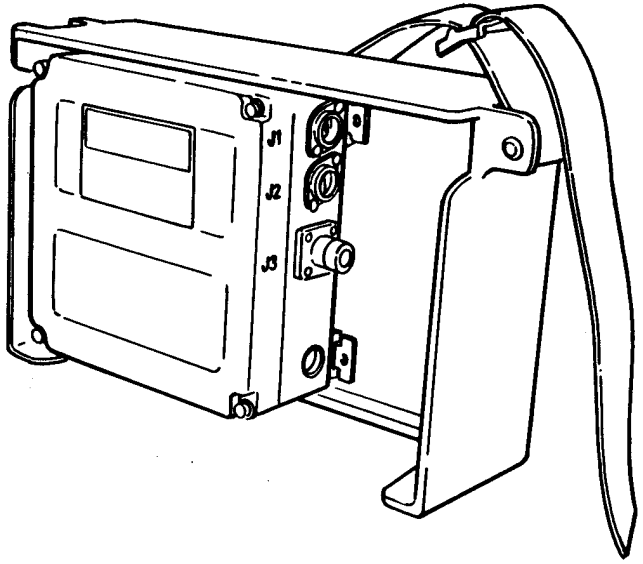
- **Disconnection of RDUs**
- **Disconnection of HDDUs**
- **Disconnection of power**
- **Control panel alterations**
- **Disconnection of system cables (BIT errors)**
- **Removal of TDRS memory card**

TARGET SYSTEM TEMPLATE



REMOTE SYSTEM INTERFACE COMPONENTS

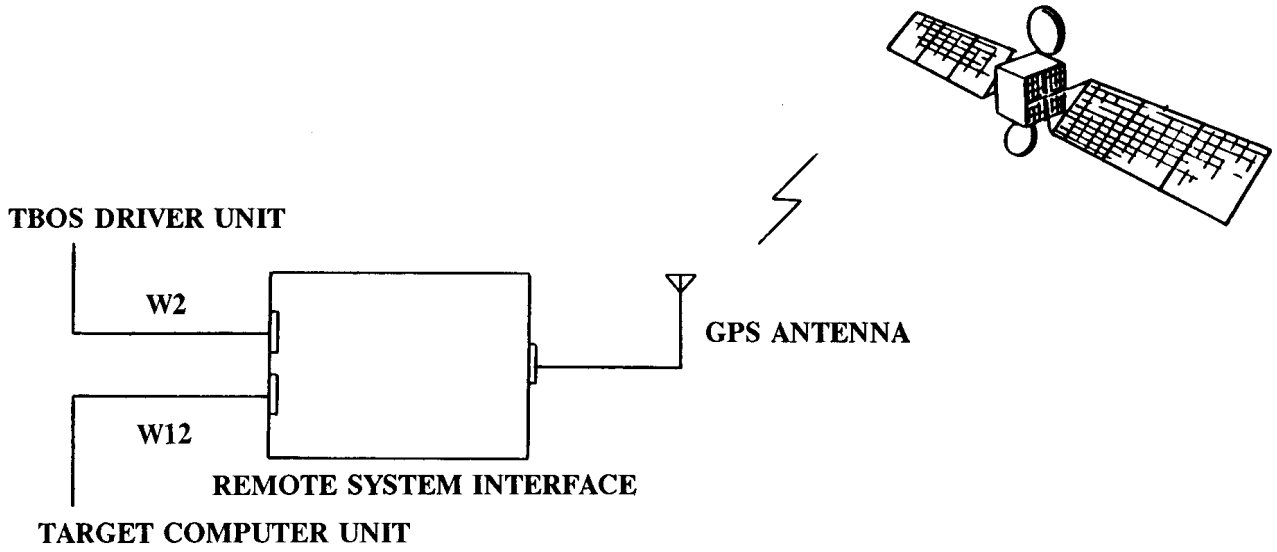




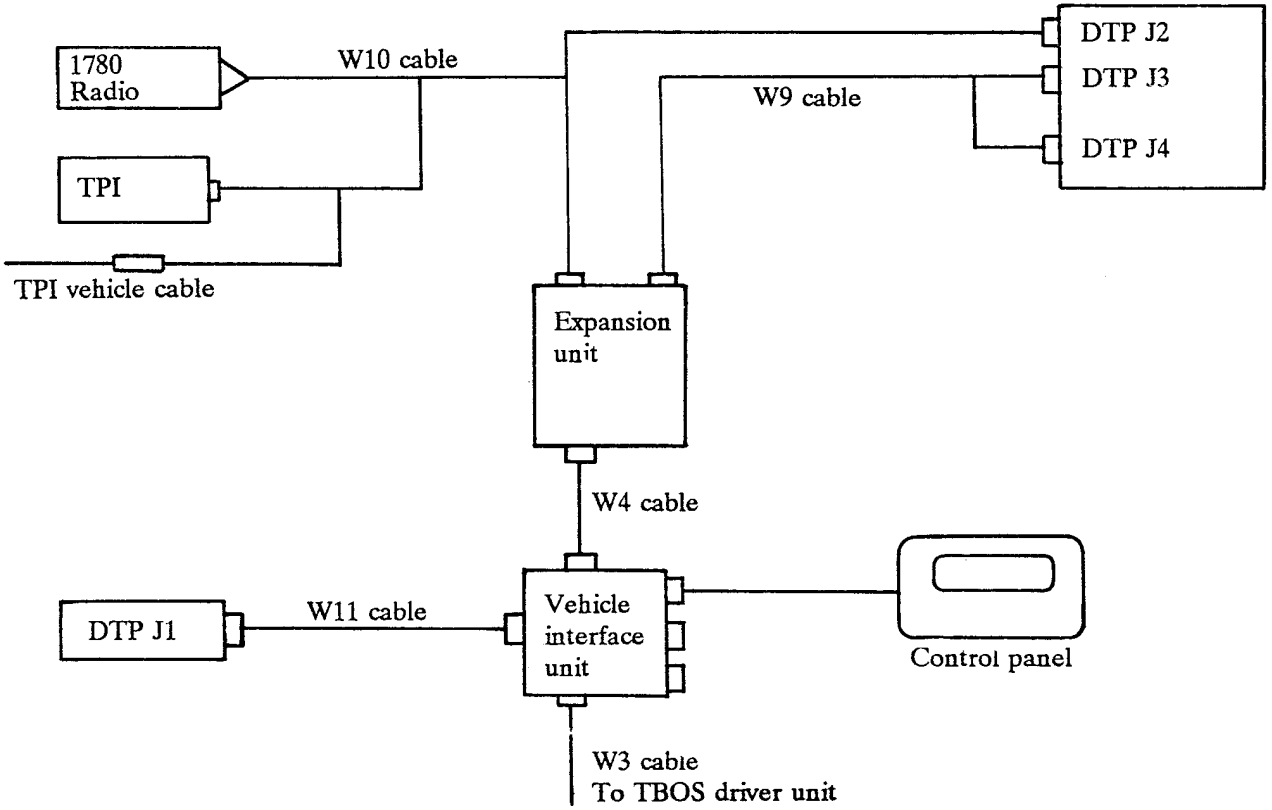
REMOTE SYSTEM INTERFACE MAIN FUNCTIONS

- **Determine position**
- **Provide system clock**

SYSTEM DESIGN REMOTE SYSTEM INTERFACE



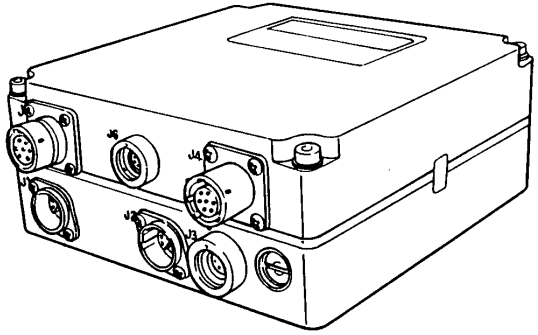
VEHICLE INTERFACE ASSEMBLY SYSTEM DESIGN

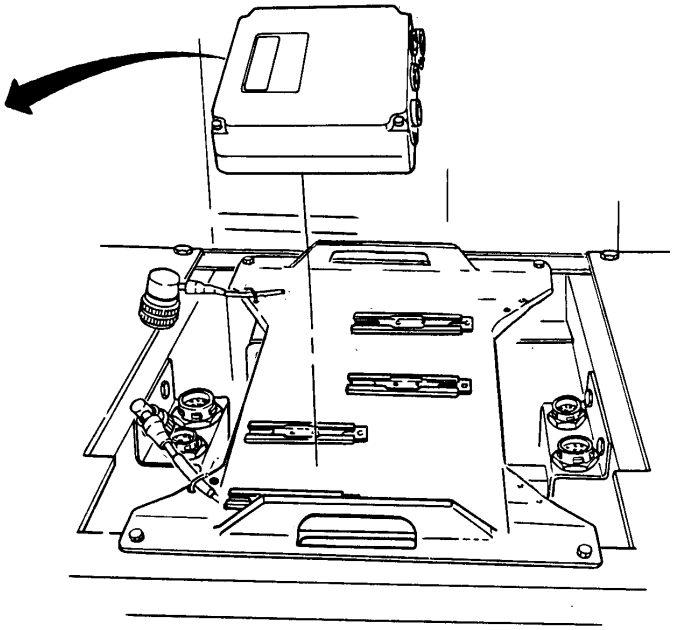


VEHICLE INTERFACE MAIN FUNCTIONS

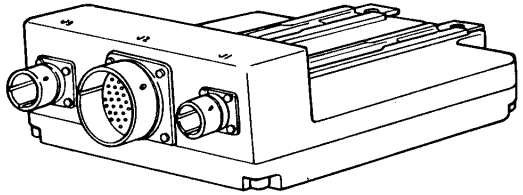
- **Receive and distribute power**
- **Monitor/inject signals into turret weapons**
- **Monitor turret weapon status for AAR**
- **Register turret/hull relationship**
- **Inject sound into BFV intercom**

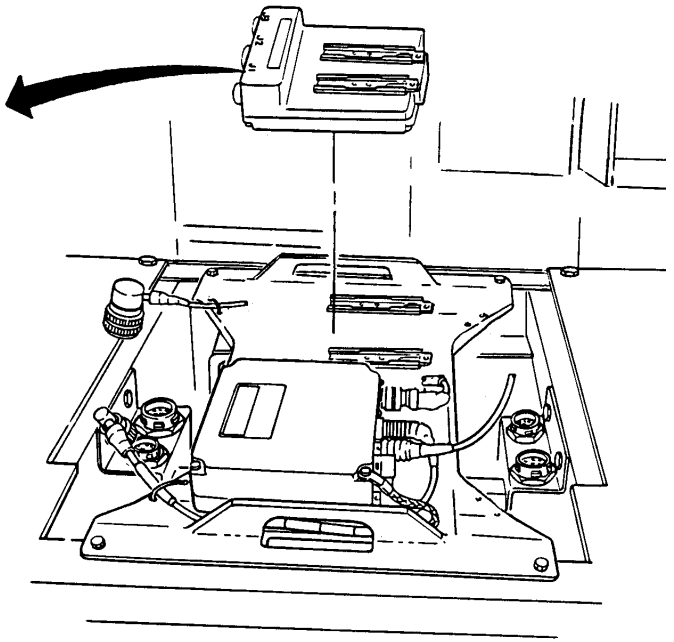
VEHICLE INTERFACE UNIT



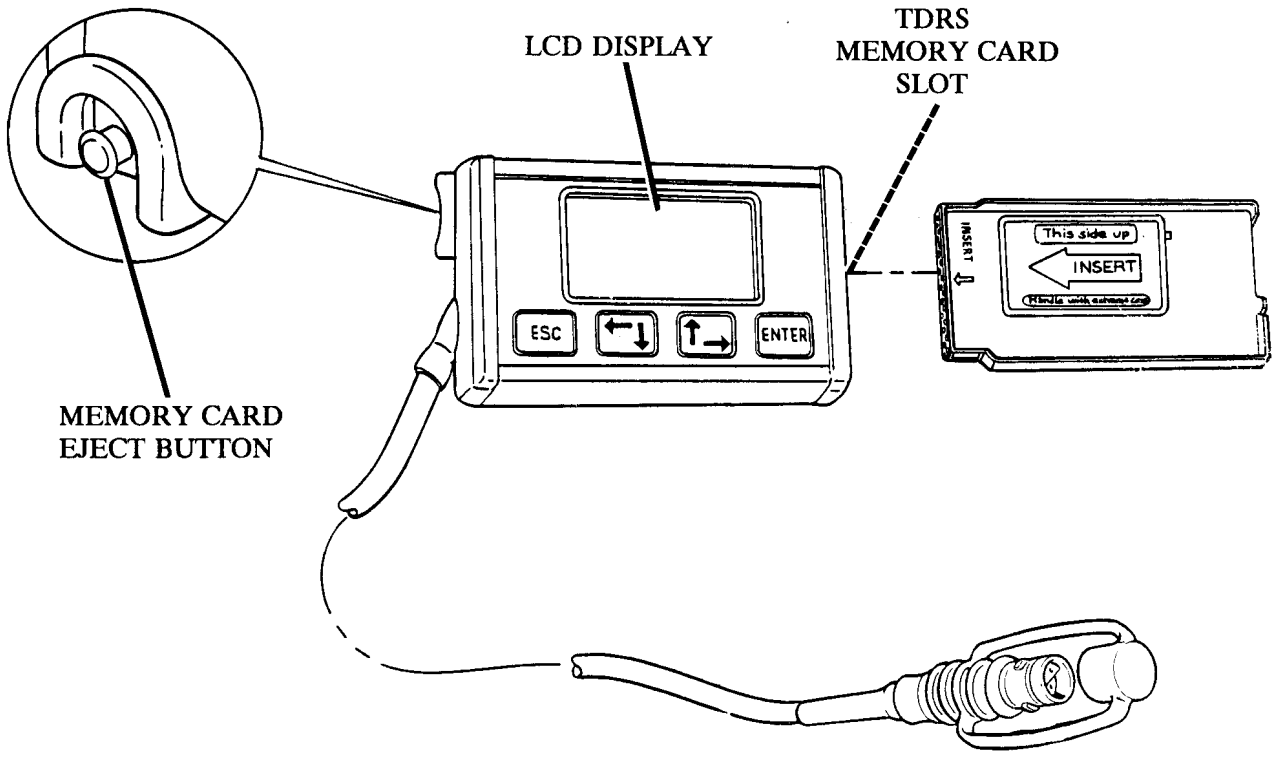


EXPANSION UNIT





OPERATOR INTERFACE



CONTROL PANEL MAIN FUNCTIONS

- **Crew/instructor interface**
- **Setup of system**
- **Defines training parameters**
- **Stores training events**

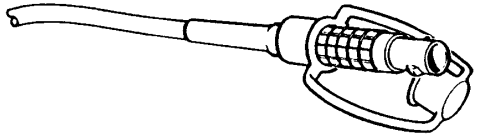
CONTROL PANEL CREW FUNCTIONS

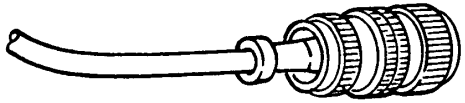
- **Built-in test (BIT)**
- **Alignment**
- **Upload of ammunition**
- **Presentation of training results**

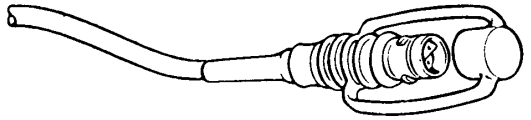
CONTROL PANEL INSTRUCTOR FUNCTIONS

- **Manually adjust system clock**
- **Add ammunition to turret**
- **Add ammunition to hull**

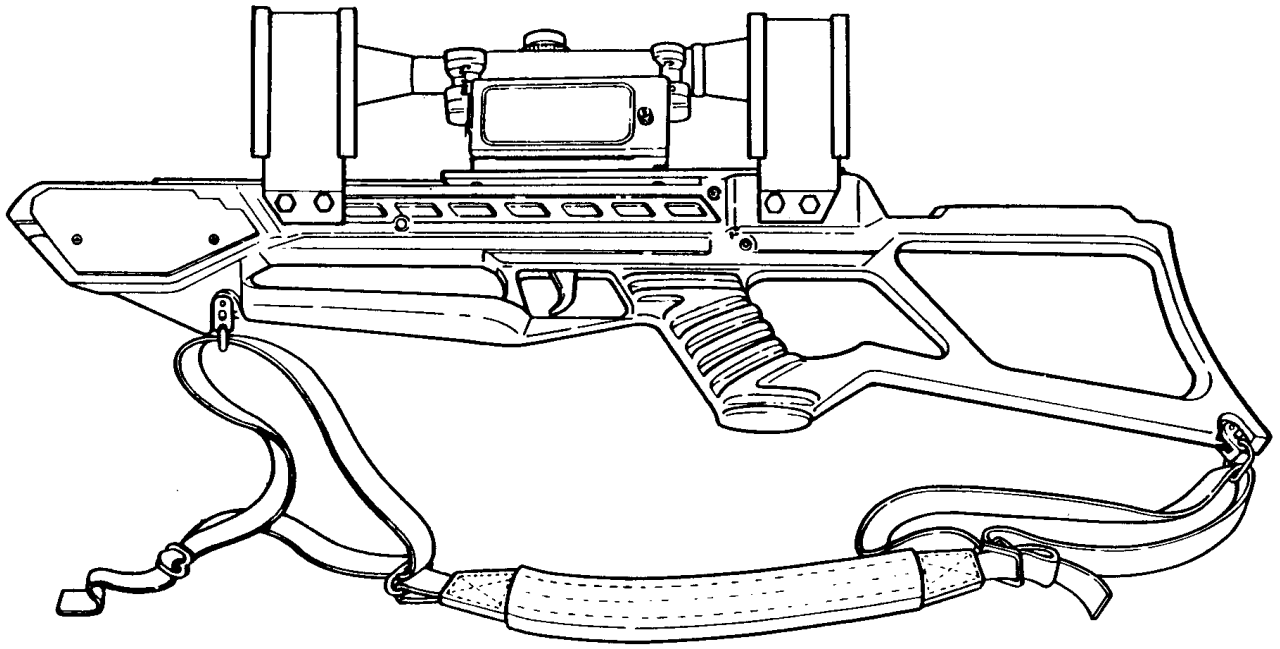
SYSTEM CABLES







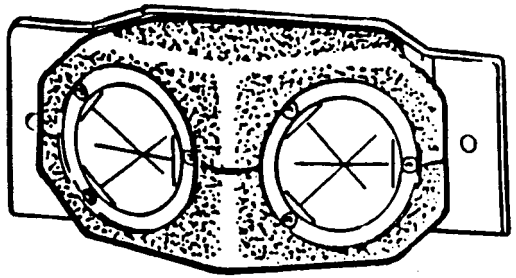
CONTROL GUN (CGUN)

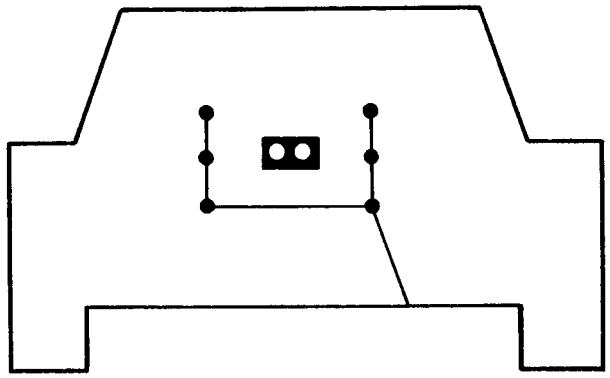


CGUN MESSAGES

- **KILL**
- **RESET**
- **TEST**
- **TIME MARK**
- **ENABLE CONTROL**

RETRO REFLECTOR UNIT





SUMMARY

- **PGS components and their function**
- **CGUN**

CLOSING STATEMENT

- **This block of instruction has provided the instructor an in-depth knowledge of PGS. The knowledge gained in this lesson will be of use when training soldiers in your unit.**